patent pending

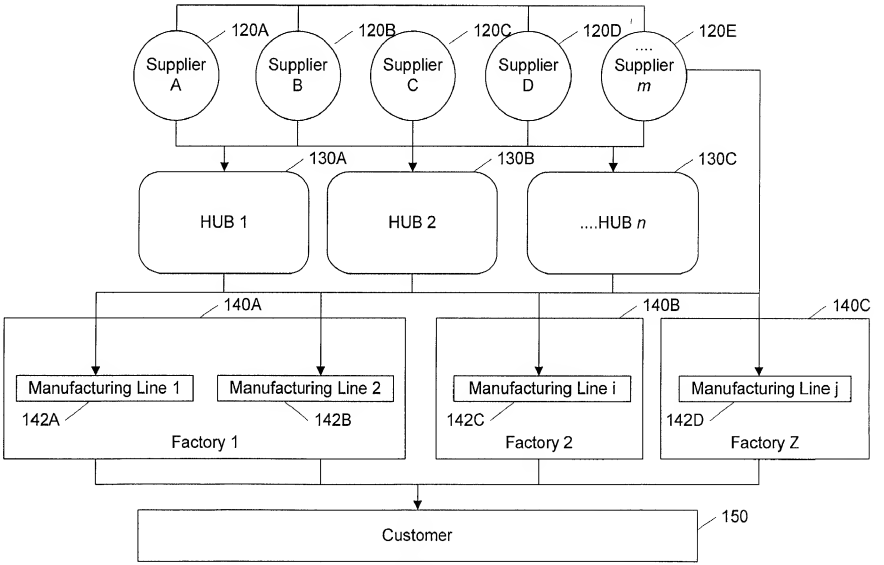


FIG. 1

Patent Application

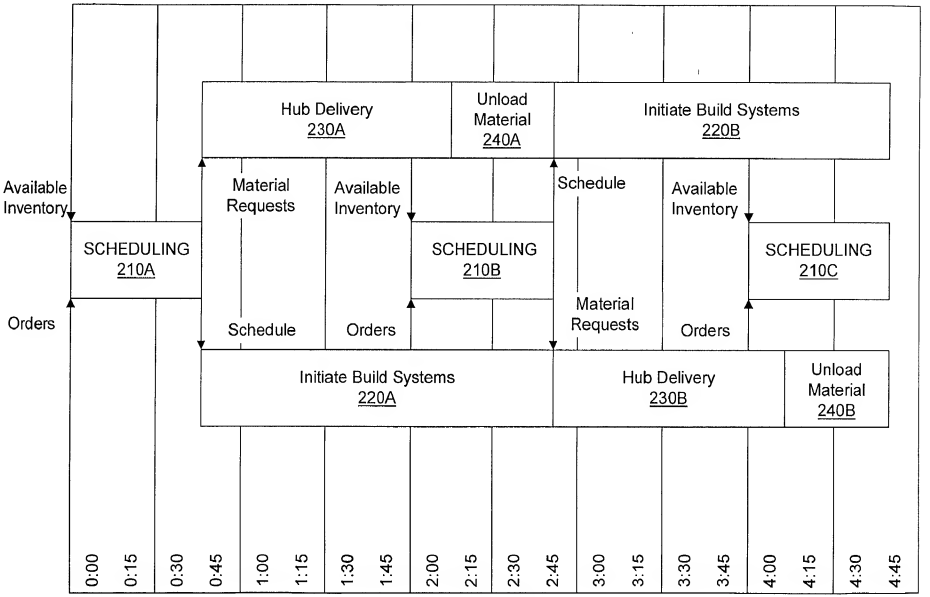


FIG. 2

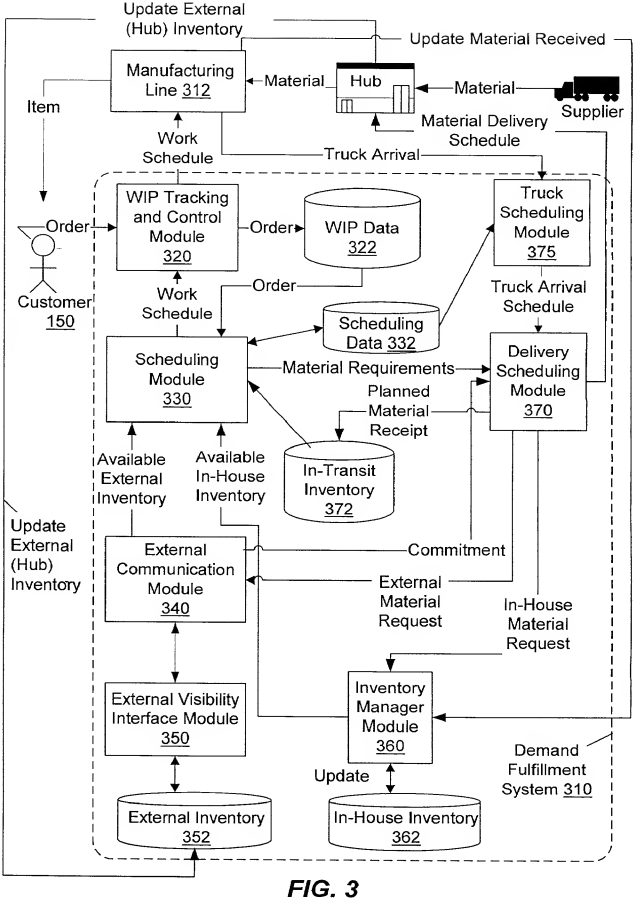

Update External (Hub) Inventory
Update Material Received
Manufacturing Line 312
Material
Hub
Material
Supplier
Item
Material Delivery Schedule
Work Schedule
Truck Arrival
WIP Tracking and Control Module 320
Order
WIP Data 322
Truck Scheduling Module 375
Order
Customer 150
Work Schedule
Order
Truck Arrival Schedule
Scheduling Data 332
Scheduling Module 330
Material Requirements
Delivery Scheduling Module 370
Planned Material Receipt
Available External Inventory
Available In-House Inventory
In-Transit Inventory 372
Update External (Hub) Inventory
External Communication Module 340
Commitment
External Material Request
In-House Material Request
External Visibility Interface Module 350
Inventory Manager Module 360
Demand Fulfillment System 310
Update
External Inventory 352
In-House Inventory 362

FIG. 3

FIG. 4

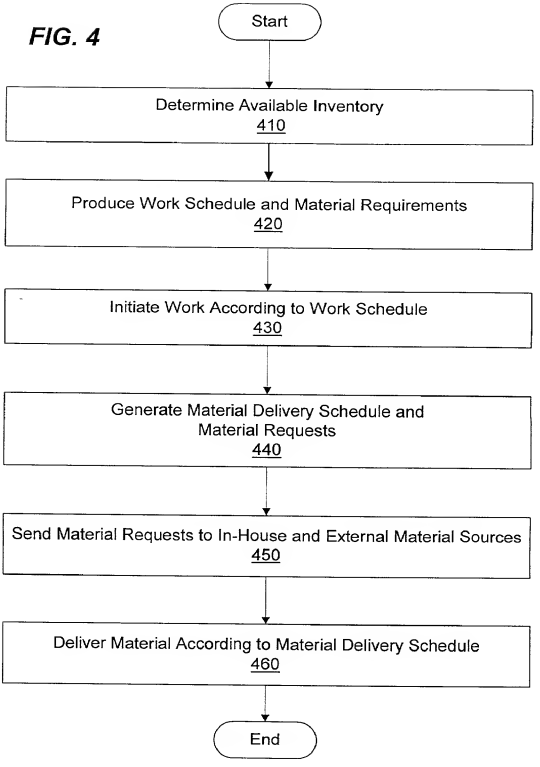
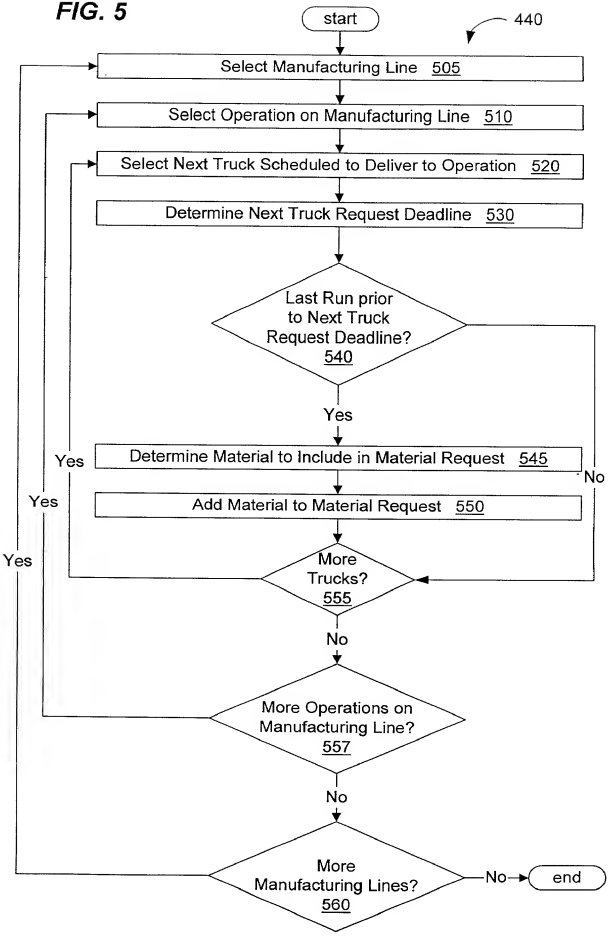

Start
Determine Available Inventory
410
Produce Work Schedule and Material Requirements
420
Initiate Work According to Work Schedule
430
Generate Material Delivery Schedule and
Material Requests
440
Send Material Requests to In-House and External Material Sources
450
Deliver Material According to Material Delivery Schedule
460
End

FIG. 5


start
440
Select Manufacturing Line 505
Select Operation on Manufacturing Line 510
Select Next Truck Scheduled to Deliver to Operation 520
Determine Next Truck Request Deadline 530
Last Run prior to Next Truck Request Deadline? 540
Yes
No
Determine Material to Include in Material Request 545
Add Material to Material Request 550
More Trucks? 555
Yes
No
More Operations on Manufacturing Line? 557
Yes
No
More Manufacturing Lines? 560
Yes
No
end

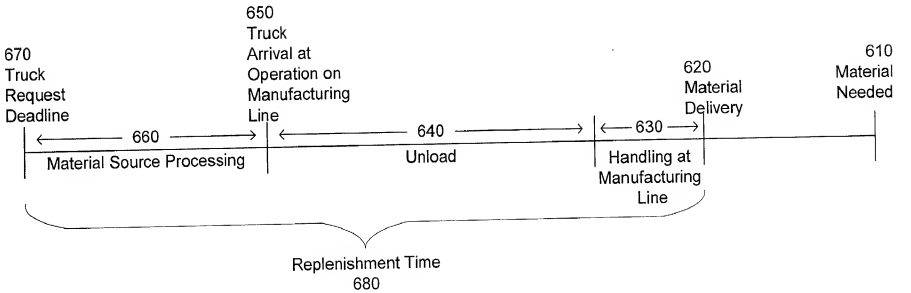
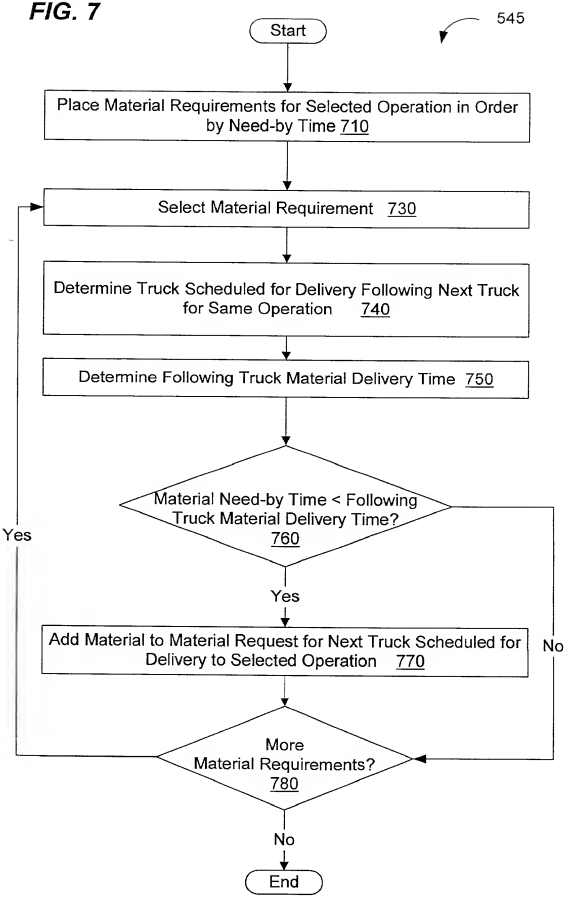

670
Truck
Request
Deadline
650
Truck
Arrival at
Operation on
Manufacturing
Line
620
Material
Delivery
610
Material
Needed
660
Material Source Processing
640
Unload
630
Handling at
Manufacturing
Line
Replenishment Time
680

FIG. 6

FIG. 7


545
Start
Place Material Requirements for Selected Operation in Order by Need-by Time 710
Select Material Requirement 730
Determine Truck Scheduled for Delivery Following Next Truck for Same Operation 740
Determine Following Truck Material Delivery Time 750
Material Need-by Time < Following Truck Material Delivery Time? 760
Yes
No
Add Material to Material Request for Next Truck Scheduled for Delivery to Selected Operation 770
More Material Requirements? 780
Yes
No
End

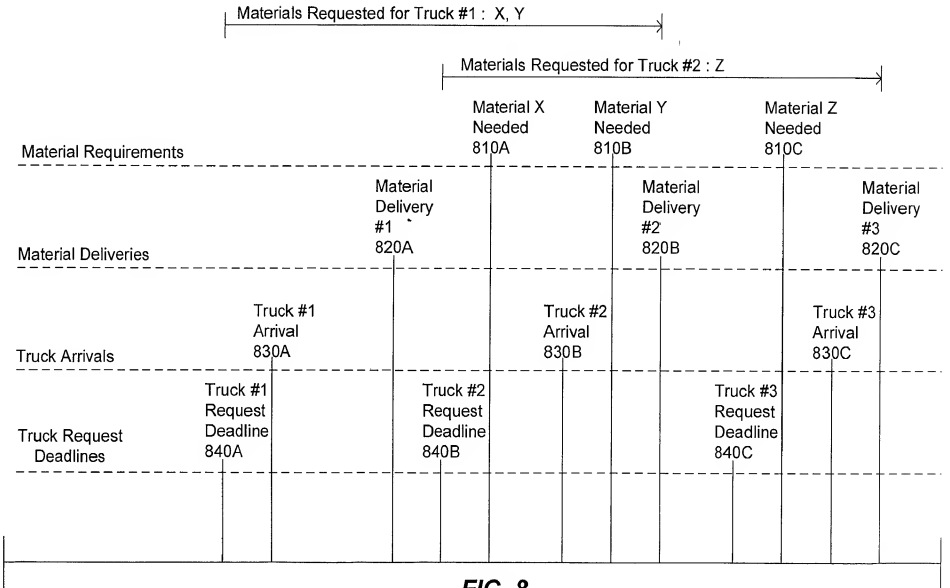

Materials Requested for Truck #1 : X, Y
Materials Requested for Truck #2 : Z
Material Requirements
Material X Needed 810A
Material Y Needed 810B
Material Z Needed 810C
Material Deliveries
Material Delivery #1 820A
Material Delivery #2 820B
Material Delivery #3 820C
Truck Arrivals
Truck #1 Arrival 830A
Truck #2 Arrival 830B
Truck #3 Arrival 830C
Truck Request Deadlines
Truck #1 Request Deadline 840A
Truck #2 Request Deadline 840B
Truck #3 Request Deadline 840C

FIG. 8